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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,133	08/29/2001	Shulong Li	5036A	6572
7590 10/08/2003				
Milliken & Company P.O. Box 1927 Spartanburg, SC 29304			EXAMINER SINGH, ARTI R	
			ART UNIT 1771	PAPER NUMBER

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/942,133

Applicant(s)

LI ET AL.

Examiner

Ms. Arti Singh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:
2. The uses of Trademarks/Tradenames have been noted throughout this application. They should be capitalized wherever they appear and be accompanied by the generic terminology. Although the use of Trademarks/Tradenames is permissible in patent applications, the proprietary nature of the marks/names should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as a trademark or tradename. To describe physical or other properties of material by mere use of trademark is objectionable since it has tendency to make trademark descriptive of product rather than leaving trademark to serve its traditional purpose, which is to identify product's source of origin. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Independent claim 4 recites physical properties of an airbag fabric having ASTM D 4833 index puncture resistance greater than about 210 lbs and ASTM F 1342 of puncture resistance. Claims merely setting forth physical characteristics desired in an article and not setting forth specific compositions which would meet such characteristics, are invalid as vague, indefinite and functional since they cover any conceivable combination of ingredients either presently existing or which might be discovered in the future and which would impart the desired characteristics. Note *Ex Parte Slob*, 157 USPQ 172. Thus, claims 15

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and 30-31 are deemed to be indefinite for reciting only the desired physical properties of the coated fabric, rather than setting forth any structural and/or chemical characteristic of airbag cushion comprising a coated fabric.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-29 and 42-52 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 6239046 by Veiga et al.

7. Veiga et al. teach a coating a knit, woven or nonwoven textile substrate with a plurality of layers of coatings, which can be polyurethane and/or polysiloxane to then form a side curtain airbag with superior air holding and heat resistance (abstract). Either a polyamide, a polyester, or other synthetic fibers can be employed as the textile fabric substrate, and it can be in the form of either a knit, a woven or a non-woven fabric. A woven nylon is the preferred fabric substrate. Any type of denier size, shape and weaving configuration can be employed to advantage. The shape or configuration to be employed in the air holding restraint system will depend upon its ultimate location in the vehicle. For example, driver or passenger air bags will generally be elliptical, spherical or circular, while air curtains will generally be rectangular or oval in configuration. The coating of the fabric substrate takes place on a coating line that has multiple coating stations with driers in sequence. Initially, prior to applying the first polyurethane coating layer, the fabric substrate is heat-set and stabilized by passing through an oven at about 250 degrees F to 400 degrees

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F. Thereafter, it is coated in accordance with the present invention. In one embodiment of the present invention, as can be seen by reference to FIG. 1, a fabric substrate 10 is first coated on its upper or top surface 12 with a polyurethane layer 14, which is referred to as a prime coat or adhesive coat, which serves to adhesively bond the filaments of the textile substrate so they do not comb or unravel. The polyurethane used in the prime coat or first layer 14 can be selected from among aliphatic and aromatic polyether and polyester polyurethanes, preferably those having a solids content of from about 30% to about 60%, by weight. These types of polyurethanes provide good adhesion to nylon and polyester and have satisfactory hydrolysis, i.e., resistance to breakdown under ambient storage conditions, to insure that the air bag is ready for use when deployed. The polyurethane coating weight applied is about 0.3 ounces/square yard to about 1.5 ounces/square yard with about 0.5 ounces/square yard preferred. Preferably, the prime coat layer 14 completely covers the entire surface 12 of the fabric 10, or it can be a partial coating designed to coincide with a particular area of the fabric. Also particular patterns, such as stripes, wavy lines, etc., with different coating weights can be employed to obtain the level of air permeability desired. The prime coat layer is then dried in an oven at an elevated temperature of from about 225 degrees F to about 425 degrees for about 1.5 minutes to about 3.0 minutes while advancing the fabric at about 1,000 yds/hr. to about 3,000 yds./hr., with 1,200 yds/hr is preferred. At a second coating station, an elastomeric polysiloxane layer 16 is then coated onto the surface of the polyurethane layer 14 in overlying relationship thereto. The coating weight of the elastomeric polysiloxane layer is about 0.5 ounces/sq. yd to about 5.0 ounces/sq. yard, with about 1.2 ounces/sq. yard being preferred. It is then dried in an oven at an elevated temperature of about 300 degrees F to 450 degree F. Since the silicone layer 16 is inert, it yields a non-blocking product which does not stick to itself either during extended storage in

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the vehicle and will deploy instantaneously when needed in the event of an accident. Further, silicone is extremely resistant to the elevated temperature encountered during inflation. The laminated or composite structure depicted in FIG. 1 typically forms a panel of an air bag or air curtain after die cutting into the desired configuration by the air bag manufacturer. A complementary composite structure, similar in all respects to the structure of FIG. 1, forms the opposite panel of the air bag or air curtain. In accordance with the present invention, a pair of such coated panels are joined together about their peripheries by sewing alone, or by sewing and heat sealing, or by sewing and room temperature vulcanization. When heat sealing is employed, radio frequency (RF) sealing, hot air sealing or ultrasonic sealing at about 10 to about 80 megahertz and at about 250 degrees F to about 450 degrees F are the preferred sealing methods, with radio frequency sealing being especially preferred.

Veiga et al. disclose what is set forth above, however Veiga et al. fail to the use of the same ASTM test standards for puncture resistance and leak down time. It is reasonable to presume that the said featured property is inherent to Veiga et al. Support for said presumption is found in the use of like materials i.e. a coated side airbag, which would result in having this property. The burden is shifted to Applicant to prove otherwise. *In re Fitzgerald 205 USPQ 495*. Alternatively, the presently claimed properties of puncture resistance and leak down time would obviously have been present, along with the tensile strength, once the Veiga product was provided. *See In re Best, 195 USPQ 433*.

#### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be

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patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 30-41 rejected under 35 U.S.C. 103(a) as being unpatentable over Veiga et al. (USPN 6239046) as applied to claims 1-29 and 42-52 above, and further in view of Sollars et al. (USPN 6220309). Veiga et al. disclose what is set forth above but do not explicitly teach the use of a single fabric that is formed from a specific weave and virtually forms the entire airbag having single fabric layers and double fabric layers, as desired in claims 30-41. Sollars et al. co-owned by Applicant teaches all of these features. A person having ordinary skill in the art would have found it obvious to have employed the specific fabric having the weave structure as taught by Sollars et al. in manufacturing the airbag of Veiga et al. A skilled artisan would have been motivated to do this, as formulating an airbag from a single weave process instead laminating separate pieces together, makes economic sense.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ms. Arti Singh whose telephone number is 703-305-0291. The examiner can normally be reached on M-F 9-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Ms. Arti Singh  
Patent Examiner  
Art Unit 1771

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